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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

F.S.
FO-27

February 2, 1928

FOREIGN NEWS ON FATS AND OILS

FOREIGN OLIVE OIL PRODUCTION AND UNITED STATES PRICES, JANUARY 1928

Olive oil production for the 1927-28 season in the Mediterranean Basin is expected to be well above that of last year and may be the largest crop produced in recent years, according to reports so far received in the Bureau of Agricultural Economics from the International Institute of Agriculture and Consular officers. This is due chiefly to the large increase expected in the olive oil production of Spain for the present season since the crops of Italy and Greece, the other chief producers, are expected to be below those of last year. In spite of this indicated increase in production prices in the United States have remained steady during the last quarter of 1927 and at the beginning of 1928 were at a level well above that of the corresponding period of last year. Stocks of old crop in the United States are negligible, according to trade reports. United States imports both of edible and inedible olive oil for the first 11 months of 1927 were slightly below those for the same months in 1926.

Production

Olive oil production in 1927 for 8 countries of the Mediterranean Basin which last year produced two-thirds of the total crop of the Basin, amounts to 1,528,600,000 pounds, which is more than the total crop of the Basin in either of the past two years and is five-sixths of the total production of the Basin in 1924. The eight countries reporting for 1927 do not include Italy which ranks second in importance among the Mediterranean producers. Olive production in Italy is reported to be 15 per cent below last year and since most of the crop is used for oil, it is expected that oil production will be reduced by an approximately similar amount. Unless Italian oil production is reduced appreciably more than the olive crop, the total olive oil production will be above even the large outturn of 1924. See table, page 3.

The preliminary estimate of the Spanish olive oil crop, issued by the government in November is 1,205 million pounds compared with 507 million pounds produced last year, or an increase of 698 million pounds. The November estimate last year was 512 million pounds or only 5 million pounds above the final estimate. Should the present estimate be borne out, the crop would be the largest for which there is any record for that country. Normal production of olive oil in Spain is about 660 million pounds.

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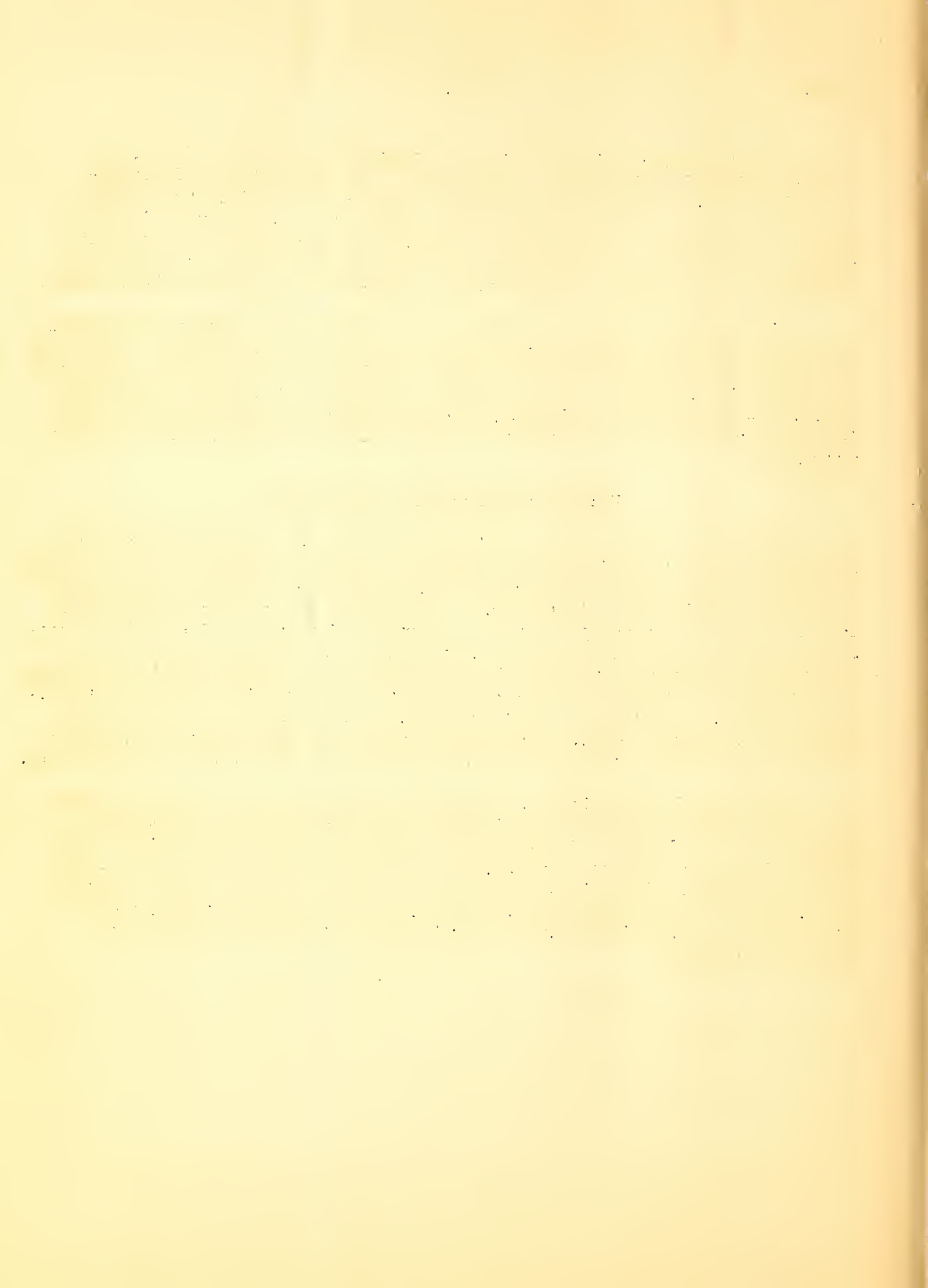
No estimate is available for the production of oil in Italy, the country second in importance. According to the International Institute of Agriculture, olive production was poor in Northern and Central Italy because of serious infestation by olive flies, but was fairly good in the South and Islands. The production of olives is estimated at 2,352 million pounds compared with 2,769 million pounds produced in 1926, or a decrease of 15 per cent. Average production from 1921-1925 was 2,596 million pounds.

In Greece production of olive oil is estimated at 150 million pounds, or 44 million pounds below last year's crop of 194 million pounds. The crop of Portugal is reported to be good but no estimate is available. Production in Algeria is well above the low crop of last year but is below the production of 1924 and 1925. In France, French Morocco and Greater Lebanon an increase over last year is expected while Tunis and Turkey report decreased production.

United States prices and imports

Prices of olive oil in the United States have remained steady during the last quarter of 1927 and the beginning of 1928 at \$2.50 to \$2.75 a gallon in barrels. These are well above the \$1.95 to \$2.25 which prevailed during the corresponding period last year. The increase in price as compared with last year may be partially due to the shortage of cotton seed for oil extraction as compared with last year. The fact that no decrease in price has followed the announcement of the large Spanish crop is explained by the trade as partially the result of delay in moving the crop resulting from bad weather conditions. According to trade reports, no imports of the new crop are expected for several weeks. Consumption during the latter part of 1927 was reported to be above average and stocks of old crop are said to be negligible.

Imports of olive oil both edible and inedible into the United States for eleven months of 1927 were slightly below those for the corresponding period of 1926. Imports of edible oil, January through November 1927 were 71,949,000 pounds compared with 74,768,000 pounds during the corresponding period last year. Inedible oil imports for eleven months of 1927 amounted to 45,871,000 pounds compared with 49,299,000 in 1926. See table, page 3 for imports into the United States for the years 1924-1927 by kinds and principal countries.



OLIVE OIL: Production in the Mediterranean Basin, 1924-1927

Country	1924	1925	1926	1927 Preliminary
	1,000	1,000	1,000	1,000
	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>
Spain	738,959	722,176	507,300	1,205,170
Italy	459,656	295,210	373,200	---
Greece	249,470	126,560	193,880	149,980
Portugal	86,990	84,530	34,720	---
Algeria	51,486	57,300	22,310	41,890
Tunis	48,500	74,960	88,190	35,270
France	17,640	15,430	16,530	18,740
French Morocco	19,180	22,050	4,410	24,250
Palestine	10,800	5,930	10,250	---
Syria	22,950	12,660	12,120	---
Alacuites	3,310	4,410	3,310	---
Greater Lebanon	11,240	4,410	13,200	18,300
Turkey	a/ 66,000	a/ 42,000	a/ 40,000	b/ 35,000
Cyprus	4,230	880	1,570	---
Yugoslavia	11,325	3,020	9,700	---
Total comparable 1927 :	1,202,475	1,064,886	885,820	1,528,600
Total Medit. Basin . . . :	1,801,716	1,471,526	1,330,690	

Official sources and International Institute of Agriculture except as otherwise noted.

a/ Smyrna District as reported by Consul Holmes. b/ From "Foodstuffs 'Round the World", December 30, 1927.

OLIVE OIL: Imports into the United States, 1924-1927

Year	Kind	Spain	Italy	France	Total all countries
		1,000	1,000	1,000	1,000
		<u>pounds</u>	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>
1924	Edible	14,039	53,236	5,856	76,136
	Inedible- Sulphured or foots :	1,992	19,204	46	24,678
	Denatured	1,998	3,040	213	7,240
1925	Edible	15,547	61,984	7,500	90,426
	Inedible- Sulphured or foots :	2,565	32,198	---	40,823
	Denatured	1,758	4,810	169	10,884
1926	Edible	16,966	55,402	4,434	73,506
	Inedible- Sulphured or foots :	15,710	20,857	349	40,300
	Denatured	8,242	847	407	9,925
1927	Edible	18,363	45,111	5,596	71,949
eleven	Inedible- Sulphured or foots :	---	---	---	39,562
months	Denatured	---	---	---	6,309
only					

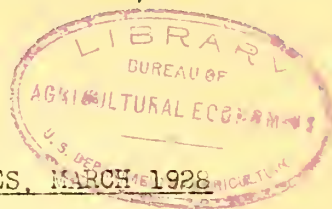
Source: 1924-1926 Foreign Commerce and Navigation of the United States.
1927 Monthly Summary of Foreign Commerce of the United States,
November 1927, Part 1.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

F.S.
FO-28

March 23, 1928.

FOREIGN NEWS ON FATS AND OILS



FOREIGN OLIVE OIL PRODUCTION AND UNITED STATES PRICES, MARCH 1928

Olive oil production in the Mediterranean basin for the 1927-28 season is estimated to be above any total of recent years, according to reports from countries which in 1926 produced 93 per cent of the total Mediterranean crop. This confirms indications reported early in February by the Foreign Service of the Bureau of Agricultural Economics. The increase is due to the record crops in Spain and Portugal, the production in other important countries being generally below last year. Prices in the United States dropped during February and are now slightly below those of the same time last year, but the market is reported firm. Imports of edible oil into the United States during January 1928 were below those of last year, while imports of inedible oil were about 100 per cent above imports during January 1927.

Production

The production of olive oil in the Mediterranean basin in 1927 in eleven countries which last year produced 93 per cent of the crop of the basin, is estimated at 2,133,610,000 pounds, or well above any total of recent years. Production in the same countries last year was 1,303,990,000 pounds, while the 1924 production which was considered high was 1,759,921,000 pounds.

Distribution of the 1927 harvest was very unequal. Of the four most important producing countries, Spain and Portugal show exceptional increases, which have resulted in a record crop, while Italy and Greece show decreased production. Conditions in the Iberian peninsula during the year were reported to be excellent. A good blossoming was followed by a regular development of the fruit favored by a summer not too warm or too dry and by an autumn for the most part warm and without winds, according to the International Institute of Agriculture. The early estimate of a record production of 1,204,000,000 pounds for Spain compared with 507,000,000 pounds in 1926 is being borne out by late reports, and a record crop of 298,000,000 pounds compared with 35,000,000 pounds in 1926 is now reported for Portugal, giving a total for the Iberian peninsula alone of 1,502,000,000 pounds, which is above the production of the entire Mediterranean basin in 1925 and 1926. In Morocco also conditions were favorable and a good harvest obtained.

In Southern Italy, the principal producing zone of that country, severe and prolonged summer drought caused falling and prevented the growth of fruit, while in the central and northern provinces persistent attacks of oil fly, favored by a warm and temperate autumn, caused serious damage to the fruit and production of oil is estimated at 298,000,000 pounds, or 75,000,000 pounds below the 1926 production. The crop of Greece is still

estimated at 150,000,000 pounds compared with 194,000,000 pounds in the previous year. North Africa, Algeria and Tunis suffered from long summer drought and production is below normal.

OLIVE OIL: Production in the Mediterranean Basin, 1924-1927

Country	1924	1925	1926	1927 :preliminary
	1,000	1,000	1,000	1,000
	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>
Spain	738,959	722,176	507,300	1,203,700
Italy	459,656	295,210	373,200	297,600
Greece	249,470	126,560	193,880	149,980
Portugal	86,990	84,530	34,720	297,620
Algeria	51,486	57,300	22,310	40,800
Tunis	48,500	74,960	88,190	35,270
France	17,640	15,430	16,530	18,740
French Morocco	19,180	22,050	4,410	26,500
Palestine	10,800	5,930	10,250	8,100
Syria	22,930	12,660	12,120	-
Alaouites	3,310	4,410	3,310	-
Greater Lebanon	11,240	4,410	13,200	20,300
Turkey	<u>a/</u> 66,000	<u>a/</u> 42,000	<u>a/</u> 40,000	<u>b/</u> 35,000
Cyprus	4,230	880	1,570	-
Yugoslavia	11,325	3,020	9,700	-
Total comparable 1927	1,759,921	1,450,556	1,303,990	2,133,610
Total Mediterranean				
Basin	1,801,716	1,471,526	1,330,690	

Official sources and International Institute of Agriculture except as otherwise noted.

a/ Smyrna District as reported by Consul Holmes.

b/ From "Foodstuffs 'Round the World", December 30, 1927.

United States prices and imports

Prices of olive oil in the United States dropped during the third week of February to \$2.05-\$2.30 a gallon in barrels from their previous level of \$2.50-\$2.75 which prevailed during the last quarter of 1927 and January 1928. During the corresponding period last year prices rose to \$2.10-\$2.50 per gallon from the earlier price of \$1.95-\$2.25, while a slight increase the second week of March 1927 brought prices to \$2.25 to \$2.50 per gallon following confirmation of the low estimate for the 1926 crop of Spain. In spite of the record crop in Spain for the 1927 season, the United States olive oil market is reported by the trade to be strong and well maintained. This firmness, according to a trade report, is due to slow movement of the crop at primary points and the financing of the growers by the Spanish Government which has prevented forced sales at discounts.

FQ-28

Total imports of olive oil into the United States in 1927 were below those of 1926. In January 1928 imports of edible oil amounted to only 3,863,000 pounds compared with 5,085,000 during January 1927. Imports of inedible oil were above those of January 1927 being 3,133,000 pounds, compared with 1,553,000 in January 1927.

OLIVE OIL: Imports into the United States,
1924-1928

Year :	Kind :	Spain :	Italy :	France :	Total all countries :
1924 :	:	1,000 :	1,000 :	1,000 :	1,000 :
:	:	<u>pounds</u> :	<u>pounds</u> :	<u>pounds</u> :	<u>pounds</u> :
:	:Edible	14,039 :	53,236 :	5,856 :	76,186 :
:	:Inedible - Sulphured or foots :	1,992 :	19,204 :	46 :	24,673 :
:	: Denatured. :	1,998 :	3,040 :	213 :	7,240 :
1925 :	:Edible.....	15,547 :	61,984 :	7,500 :	90,426 :
:	:Inedible- Sulphured or foots :	2,565 :	32,198 :	---	40,823 :
:	: Denatured.....	1,753 :	4,310 :	169 :	10,884 :
1926 :	:Edible.....	16,966 :	55,402 :	4,434 :	78,506 :
:	:Inedible - Sulphured or foots :	15,710 :	20,857 :	349 :	40,300 :
:	: Denatured.....	8,242 :	847 :	407 :	9,925 :
1927 :	:Edible.	18,895 :	47,110 :	6,010 :	75,025 :
:	:Inedible - Sulphured or foots :	---	---	---	42,307 :
:	: Denatured.....	---	---	---	6,819 :
1928 :	:Edible.....	1,182 :	2,284 :	309 :	3,863 :
January:	:Inedible - Sulphured or foots :	---	---	---	2,284 :
only::	: Denatured.....	---	---	---	349 :
:	:	:	:	:	:

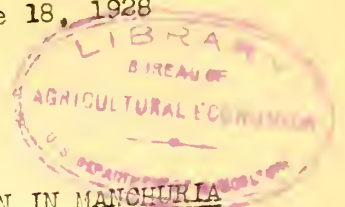
Source: 1924-1926 Foreign Commerce and Navigation of the United States.
1927-1928 Monthly Summary of Foreign Commerce of the United States.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

F.S.
FD-29

June 18, 1928

FOREIGN NEWS ON FATS AND OILS



THE 1927 SOYBEAN CROP AND CURRENT MARKET SITUATION IN MANCHURIA

Latest reports of the 1927 production of soybeans in Manchuria are for a crop not greatly in excess of the 1926 crop of about 4,000,000 short tons, according to a report to the Foreign Service of the Bureau of Agricultural Economics from Paul O. Nyhus, Agricultural Commissioner in the Orient. Early reports for 1927 had predicted an increase as high as 40 per cent, but subsequent unfavorable weather reduced prospects considerably.

A slow market for bean cake and smaller takings by Japan reduced milling operations considerably in the latter part of 1927, but improvement has been shown in recent months. The lack of demand was attributed more to the low prices of rice and silk in Japan than to a sudden increase in the use of mineral fertilizers.

The gold equivalent of Manchurian bean and bean oil prices have been somewhat higher than a year ago. Bean cake prices, which were below last year during the early months of the season, increased during 1928 and in March surpassed the corresponding quotations for last year, due largely to the approach of the period for supplying fertilizer to the Japanese fields and a consequent increase in Japanese demand.

Production

Production prospects in August 1927 were especially promising and an estimate of 4,890,000 short tons for 1927 was issued by the South Manchurian Railway, according to Mr. Nyhus. A later estimate by the same company placed the crop at 5,670,000 short tons. Prospects continued favorable until September 12, when abnormally early frosts, which lasted for several nights, injured both yield and quality. Further damage was caused by snow and damp weather in late October, which prevented the beans from drying, and the moisture content is expected to be above normal. Trade opinions concerning the 1927 soybean crop of Manchuria now place production only slightly above the crop of 1926, which was estimated by the South Manchurian Railway at approximately 4,050,000 short tons.

Market conditions

A smaller demand for bean cake from the Japanese markets in the latter part of 1927 soon weakened the local bean cake markets of Manchuria and milling operations were considerably decreased, especially at Dairen. Exports of bean cake from Dairen and Vladivostok from October 15 to March 1 of the present season were 462,000 short tons, compared with 645,000 tons

THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES
DEPARTMENT OF CHEMISTRY

RECEIVED

APR 11 1950

PROFESSOR ROBERT M. HARRIS

DEPARTMENT OF CHEMISTRY

UNIVERSITY OF CHICAGO

CHICAGO, ILLINOIS

U.S.A.

Dear Professor Harris:

I have the pleasure to inform you that

your letter of April 10, 1950, has been received.

The matter is being considered by the

Department and will be discussed at the

meeting of the Department on April 12, 1950.

I am sure that you will be satisfied with the

result of the discussion.

Very truly yours,

Robert M. Harris

Professor of Chemistry

University of Chicago

Chicago, Illinois

U.S.A.

for the same period last year. Japanese farmers are reducing their takings of fertilizer and hence of bean cake for the mulberry plantings and the low price of rice has diminished the demand for beans as an article of food.

The Dairen mills have been more adversely affected than the Harbin mills since the latter have been able to operate on cheap, poor quality beans and to lay down bean cake in Japan via Vladivostok somewhat cheaper than could the Dairen mills. The mills in Dairen closed down from November 20 to January 1 and although running more normally at present, mill operations at Dairen to March 1 of the current season were only 43 per cent of the corresponding period a year ago. Dairen mill production for the season to March 31 was reported as follows by the Nisshin Oil Mills, Ltd.:

Product	October to March			
	1925	1926	1927	1928
Bean cakes (1,000 pieces : of 61 lbs. each)	19,454	22,986	22,208	10,955
Bean oil (short tons) ...	63,000	74,000	72,000	34,000

The stocks of beans and round bean cake in wharf godowns at Dairen on April 16, 1927 and 1928 were as follows:

Commodity	1927	1928
	<u>Short tons</u>	<u>Short tons</u>
Beans	142,908	268,411
Bean cake	81,896	41,998

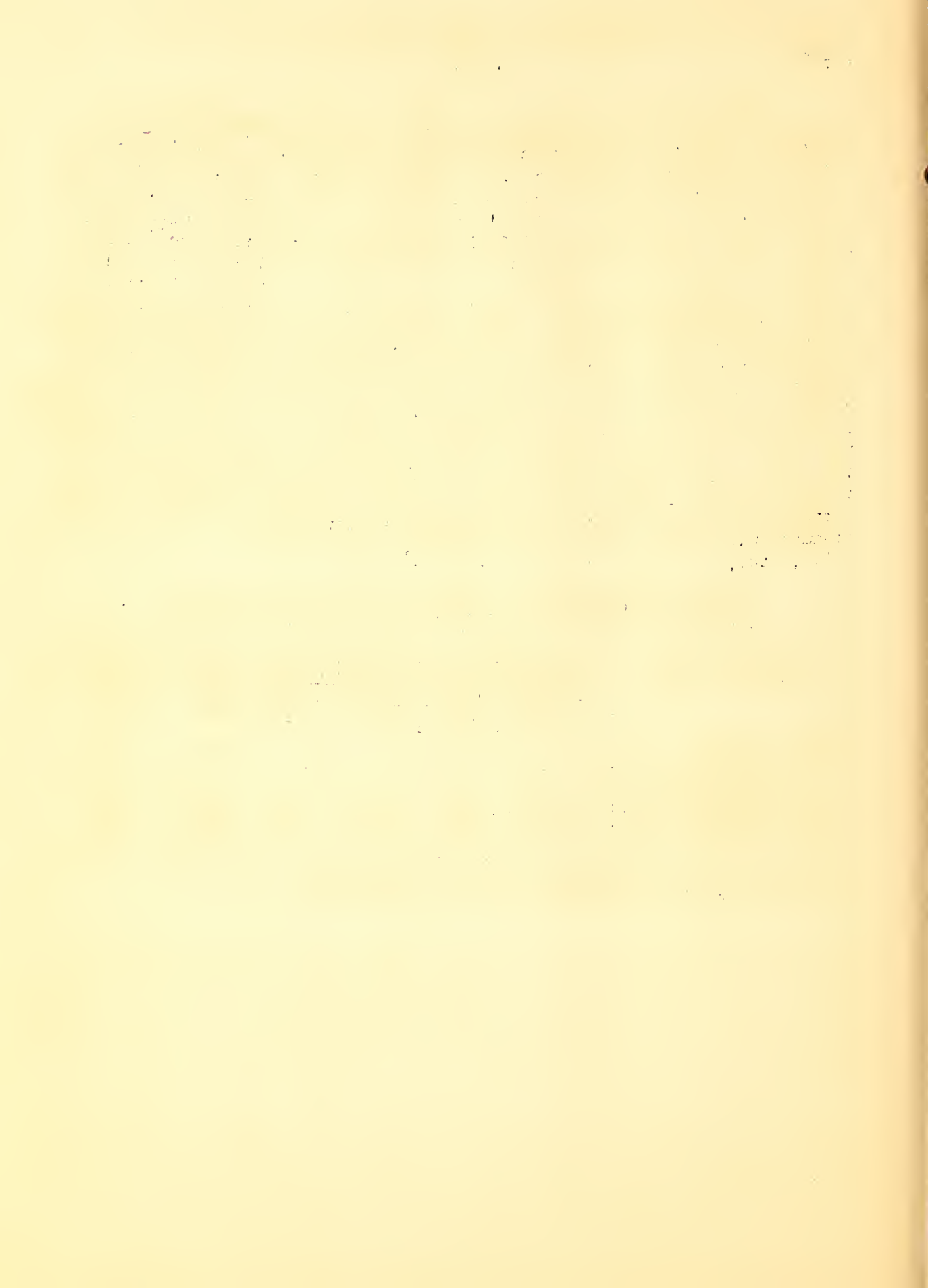
Bean oil exports for the current season reflect the reductions in milling operations. Exports from Dairen and Vladivostok from October 15 to March 1, 1927-27 were 37,000 short tons compared with 64,000 tons a year ago. Europe, however, has more than offset its smaller takings of bean oil by larger purchases of beans, of which shipments from Dairen and Vladivostok from October 15 to March 1 were 907,000 short tons compared with 642,000 tons for that period last year. Aggregate shipments of beans and the bean equivalent of bean cake for the present season to March 1 were about 5 per cent above the shipments of a year ago. Traffic via Vladivostok has been especially heavy this season.

Prices for beans and bean products at Dairen on April 21 were generally above the corresponding prices of last year. The large demand for beans in continental Europe has kept bean prices firm in spite of a larger Manchurian bean crop, and an unusual demand for bean oil in southern China has undoubtedly served to strengthen oil prices considerably. From October to March over 22,000 short tons of Dairen oil were shipped to southern China, where bean oil consumption in normal years is negligible, according to the Nisshin Oil Mills, Ltd., of Dairen. This oil, packed in scrap tins, junk drums, etc., has sold at a range of prices always above European parity, and the demand was expected to continue through the remainder of the season. Bean cake prices during the early part of the present season were low due to lack of demand from Japan, the chief market. In March, however, they passed the corresponding prices of last year and on April 21 were firm at a level above those of 1927. The strength in the market for the week of April 21 was due to the arrival of steamers to take bean cake to Japan and a hurried purchase of spot cake by shippers to cover their freight contracts. The period for supplying fertilizer to the rice fields which was then close at hand, was also credited as an important factor making for firmness. Current quotations of beans and bean products with 1927 figures for comparison, as published by the Nisshin Oil Mills, Ltd., Dairen, on April 21, 1928 are given below:

BEANS AND BEAN PRODUCTS: Quotations at Dairen on April 21 for
April-May shipments in cents per pound, 1927 and 1928

Basis of sales	Beans		Bean cake a/		Bean oil b/	
	1927	1928	1927	1928	1927	1928
	Cents	Cents	Cents	Cents	Cents	Cents
F.O.B. Dairen	2.11	2.20	--	--	6.24	6.42
C.I.F. United Kingdom :						
and Continent	2.47	2.57	--	--	6.95	7.11
C.I.F. Pacific Coast . :	2.34	2.48	1.72	1.90	6.70	6.93
C.I.F. Atlantic Coast. :	2.60	2.72	--	--	7.02	7.24

a/ Round cake of 61 pounds per piece. b/ In bulk.



UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

F.S.
FO-30

June 22, 1928

FOREIGN NEWS ON FATS AND OILS

THE SOY BEAN INDUSTRY OF MANCHURIA



Manchuria has gained considerable attention in recent years as the source of the soy-bean oil and soy-bean cake supply which the United States and Northern Europe have been consuming in increasing quantities. Manchuria produces roughly four-fifths of the world's soy bean supply exclusive of China proper and is the only country producing any appreciable quantity for export. In the United States domestic and imported soy-bean oil is used principally as a drying oil in combination with larger quantities of linseed oil. Soy-bean oil also enters the soapmaking industry when that oil is available at relatively low prices. A small amount of soy-bean oil also is used in the manufacture of oleomargarine. Soy-bean cake is imported only in small quantities for use on the Pacific Coast.

Soy bean production has increased in Manchuria from a purely domestic industry in 1890 until it now constitutes about 18 per cent of the value of China's foreign trade, being surpassed only slightly by silk grown in south China, according to a report from Agricultural Commissioner Paul O. Nyhus to the Foreign Service of the Bureau of Agricultural Economics. Exports increased 140 per cent in the period between 1915 and 1927, either in the form of beans or cake and oil. The oil milling industry in Manchuria has developed largely as a result of the Japanese demand for the cake as a fertilizer, although the lack of ocean tonnage to European markets during the war further stimulated crushing in Manchuria. Japan now takes about three-fourths of the cake exported. The Japanese demand for cake is of interest to United States purchasers, who buy oil rather than whole beans or cake, since the amount of beans crushed depends on the demand for cake rather than oil, and the price of oil is also affected by the Japanese demand for cake. The bean cake market in Japan is faced with the possibility of competition with cheaper mineral nitrogenous fertilizers.

The general trend of soy bean and bean products prices at Dairen for the past six years has been upward. Although numerous exceptions occur, fluctuations in the price of beans were generally paralleled by bean-cake prices. The margin of the bean price over that of bean-cake has been steadily increasing. The relationship between the prices of bean-oil and beans, however, is not so marked. Since the oil is a secondary factor in crushing, the price is determined partially by factors other than bean prices.

Imports of soy-bean oil into the United States fluctuate considerably. In 1912, the first year of separate classification, soy-bean oil imports were 28,021,000 pounds but dropped to 12,340,000 pounds in 1913. The demand for all vegetable oils increased greatly during the war years and imports of soy-bean oil into the United States increased to 335,984,000 pounds in 1918.

THE
JOURNAL OF THE
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Vol. 10

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branches of anthropology, including the study of the human mind,
the human body, the human social life, and the human history.

Most of the oil came directly from China, Japan and Kwantung due to the disrupting of the crushing industry in Europe. After 1918, imports declined and in 1920, the last year of free importation, amounted to only 112,214,000 pounds. From January 1 to May 27, 1921 imports of 16,286,000 pounds were received. On May 28, 1921, however, an import duty of 2.5 cents per pound was levied and for the remainder of the season, May 28 to December 31, only 997,000 pounds were imported. In 1923 imports rose to 41,679,000 pounds, but have been somewhat lower since that time, averaging 23,185,000 pounds for 1923-1927. The decline in imports of soy-bean oil has been offset by the substitution of other vegetable oils available at lower prices, according to the United States Tariff Commission. Imports of soy beans into northwestern Europe quadrupled between 1913 and 1926. Latest reports on the 1927 production and a review of the current market situation in Manchuria were given in Foreign Service release FO-29, June 18, 1928, which may be obtained on application to the Foreign Service of this Bureau.

Development of industry and uses of products

Manchurian soy bean production up to the beginning of the present century was practically limited to domestic requirements of beans for human food as well as livestock feeding and of oil for cooking and illuminating purposes. About 1895 Manchurian bean-cake came to be recognized as an economical fertilizer for rice and mulberry fields in Japan and soon cake became the primary product of the crushing industry rather than oil. Exportation of beans and oil did not begin until about 1908 when trial shipments were made to Europe by a Japanese firm. The oil trade was quick to realize the usefulness of the new product and subsequent development of the soy bean industry was rapid. At about the same time the United States began importing the oil, which at first was used principally in the manufacture of soap, according to the United States Tariff Commission. In later years it has been used more for paints and varnishes. Takings by the soap industry, however, still ranked second in 1922 and 1923. Northwestern European countries, which do not produce enough feed for their livestock, early began to import beans in preference to oil, since by crushing in Europe both the cake and oil could be used. The cake has been found to be one of the cheapest of the highly nitrogenous feeds. Europe also imports some oil, however.

In the Orient beans form an indispensable protein part of the diet in supplementing rice. "Soy-sauce", derived by fermentation of boiled beans, flour, salt and water, which is similar in taste and color to meat extract, is in general use in Japan, China, and the South Sea Islands as a condiment. "Mi-so", another product of bean fermentation, is a soup that is probably as commonly used at breakfast in Japan as breakfast cereals are in America. Soy-bean curd, obtained by boiling ground soy beans, is another food product common in the Orient. Exports of soy beans and bean products in terms of beans from Manchuria increased from practically nothing in 1895 to 1,727,000 short tons in 1915 and 4,159,000 short tons in 1927 in addition to the domestic consumption of an increasing population. Exports in the form of beans increased from 846,000 short tons in 1915 to 1,933,000 in 1927, bean oil exports increased from 72,900 short tons to 173,300 short tons and bean cake from 831,000 to 2,100,000 short tons.

The rapid development in soy bean production was facilitated by an influx of population from China proper, by the development of a system of railroads, by the freedom from civil wars which have hampered development in China proper and by the Manchurian climate, which is more favorable to bean cultivation than to some other staple temperate zone crops.

Soil and climatic conditions in relation to soy bean cultivation

The number of crops that can be profitably grown in Manchuria is restricted by climatic conditions much more than by soil conditions and the warm summer with ample rainfall and dry autumn are favorable for soy beans.

Winter temperatures are as low as in northern Manitoba and those of the summer are warm enough to mature crops of rice and cotton, a condition which is explained by the Asiatic monsoon. There is practically no snow in winter and drought continues into June with just enough rainfall in May and early June to start the beans, kaoliang and millet. Then follow hot weather and heavy rains in July and August. The average precipitation for these two months during the years 1915-1924 amounted to 12.47 inches at the experiment station at Kungchuling in central Manchuria or half of the year's total which averaged 24.35 inches. The average temperature at 10 o'clock A.M. was 77.50° F. for July and 75.40° for August. The beans make a rapid growth during the summer months. September and October are usually dry and bright and enable the crops to come to maturity and be harvested without trouble from rains. Wet weather in September and October is abnormal and is very harmful since the beans cannot then dry out before the freezing weather of early November. The prevailing winds in the winter are from the cold dry Siberian northwest, and in summer from the moist warm south-east. The average date of the last frost in spring is May 8 and of the first frost in the fall, is September 24.

These climatic conditions are better adapted to the soy beans and other crops maturing in September and later such as kaoliang, a grain sorghum, millet and corn, than to wheat and other small grains harvested in the summer. The dry weather in the spring, which may prevent wheat from germinating, and the hazard of heavy rust damage in July caused by moisture and high temperature restrict the wheat acreage and illustrate the limitations to cropping systems in Manchuria.

Relation of soy beans to other crops

In spite of climatic conditions favoring soy beans, they meet with keen competition from wheat and other crops in the use of the soil. However, they occupied about a fourth of the total acreage devoted to staple crops in 1926, according to reports of the South Manchuria Railway. They are the big cash crop of the region, providing fully half of the farm income in northern Manchuria and more than half of the total volume of freight handled by Manchurian railways. They are closely followed by kaoliang and millet, each of which occupied between a fourth and a fifth of the land in staple crops. These two crops form the principal food and feed supply of the country, supplemented by soy beans and wheat, but are not exported to a great

extent, and are not considered as cash crops. Wheat, which ranks next after soy beans as a cash crop, occupied less than a tenth of the area in staple crops in 1926, according to the report of the South Manchuria Railway. The estimates by the Railway are considered a good indication of the relative position of the different crops although in the absence of reliable census data there is little check on the accuracy of their reports. If export figures are correct, production estimates of this company for soy beans must be somewhat low since it places the 1926 crop at only 135,390,000 bushels or 4,061,700 short tons, while exports of beans and bean products from Manchuria for 1926 in terms of beans were 3,836,000 short tons and for 1927 were 4,159,000 short tons and it is known that considerable quantities are consumed in the country. Some estimates place domestic consumption at a fourth to a third of the crop. Acreage and production of staple crops in Manchuria in 1926 as reported by the South Manchuria Railway are given below:

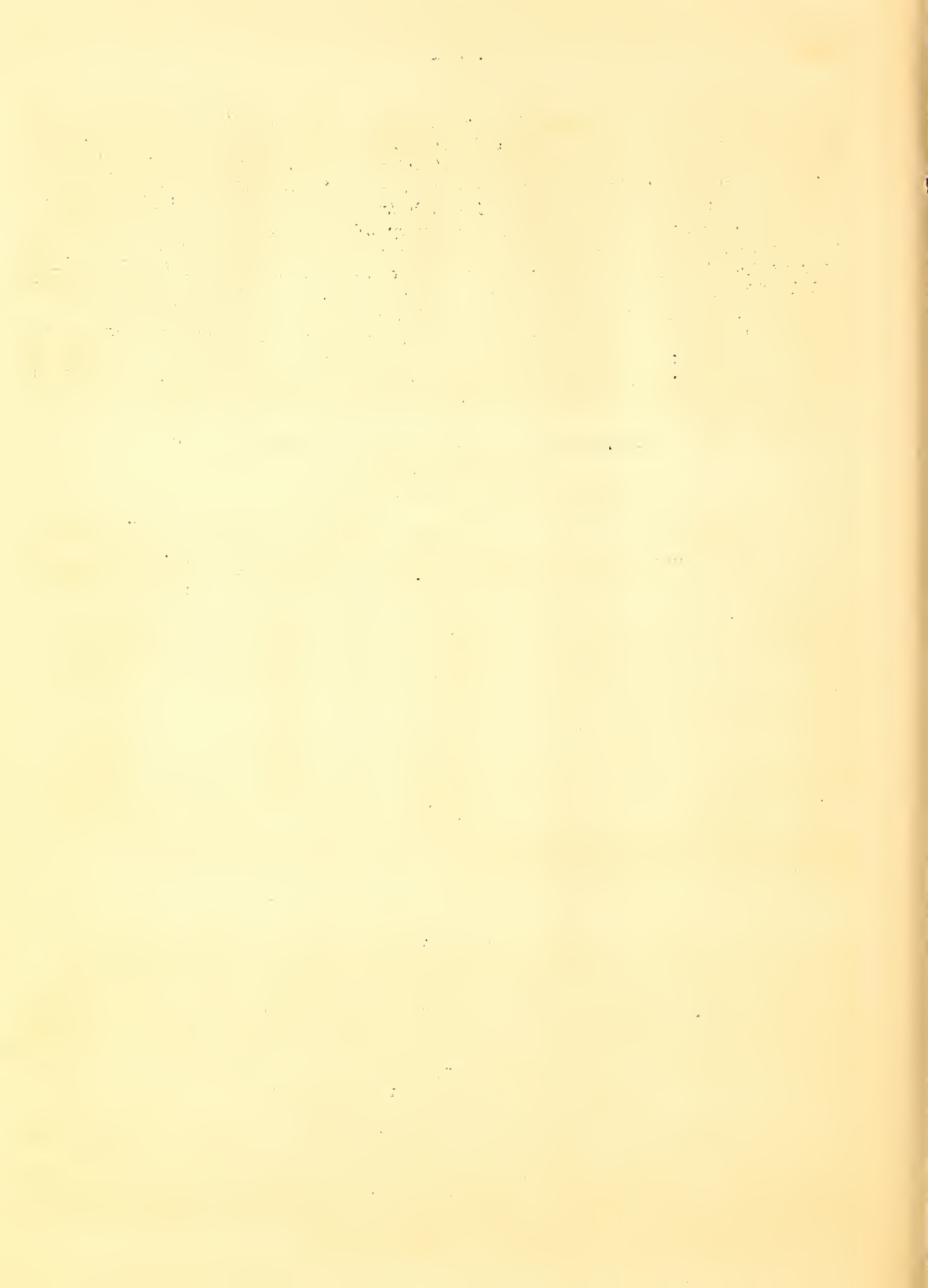
STAPLE CROPS: Estimated area, production, and yield per acre, in Manchuria, 1926

Crop	Acreage	Yield per acre	Production
	1,000 acres	Bushels	1,000 bushels
Soy beans	6,509	20.8	a/ 135,390
Kaoliang	6,093	24.2	147,783
Millet	6,071	25.5	154,505
Corn	2,772	23.3	64,673
Wheat	2,255	16.6	37,368
Other beans and peas	1,017	14.5	14,724
Barley	689	23.1	15,902
Water rice	469	21.8	10,210
Upland rice	382	22.8	8,731
Total of above	26,257		589,286

Compiled from South Manchuria Railway.

a/ Equivalent to 4,061,700 short tons.

An investigation made by a Russian Economist, E. Yashnoff, of the Economic Bureau of the Chinese Eastern Railway on the relative profit of five of the most important crops of Northern Manchuria indicated that for the period 1922 to 1924 soy beans outranked other crops, both as to returns per acre and per labor unit. Mr. Yashnoff found wheat only slightly inferior to soy beans, but returns for wheat varied much more widely than for soy beans, making its cultivation more hazardous, and when the high expenses and large quantity of seed were taken into account it would not offer any special advantage from the peasant's point of view. The table on the following page gives the returns of the five North Manchurian crops. A record has been made of the number of labor units expended in the growing of an acre of each of these crops. The labor unit is equivalent to one day's work for one man while one day's work with a horse is computed as two labor units. The return in United States dollars has been derived from the returns in Mexican dollars of each grain crop per acre computed at Harbin prices.



STAPLE CROPS: Comparative returns, in dollars, for northern Manchuria, 1922-1924 a/

Crop	Labor		Value of crops per			Return per "labor			
	units		acre			unit"			
	per acre:	1922	1923	1924	1922	1923	1924	Average	
	Units	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	
Beans	37.2	17.01	18.96	14.74	.53	.59	.77	.62	
Wheat	23.5	15.67	8.37	19.40	.67	.36	.83	.62	
Kaoliang ..	31.7	10.20	17.52	15.70	.32	.56	.49	.46	
Millet ...	31.1	8.41	15.05	16.17	.27	.49	.52	.43	
Corn	30.1	12.05	17.74	17.78	.40	.58	.58	.52	

a/ A uniform nominal rate of exchange is used, \$1.00 United States= \$2.00 Mexican currency.

Growing and harvesting methods

Spring plowing is general but the furrows are very shallow. Planting begins in April and May and is done in ridges about two feet apart. The ridges prevent the flooding of fields during the heavy rains of July and August, but opinion at the Chinese Eastern Railway Experiment Station under Russian direction favors planting on flat fields in order to minimize evaporation in the spring, followed by hilling or ridging of the rows during one of the cultivations in late June. Two or three cultivations and weedings are the rule and the extremely clean fields attest to the thoroughness of Chinese farmers in this respect.

Harvesting begins in late September and early October. The plants are cut by hand, allowed to cure out on the ground and are later hauled to the small farm yard enclosure or threshing ground in the native two-wheeled carts. The method of threshing is the same as for all grains. The bean plants are spread out evenly on a smooth hard dirt threshing ground over which horses or donkeys pulling a stone roller are kept traveling in a circle. The plants are forked about and as the beans become threshed out and settle to the bottom, the stems are raked off, the beans put in a pile for further cleaning and the process repeated with unthreshed plants. With the smaller grains as well as with the beans, the chaff is separated from the grain by throwing shovels of unwinnowed grain into the air and letting the wind carry away the chaff. The yellow bean varieties form fully 90 per cent of the plantings. In improving the varieties of soy beans being grown in Manchuria, the South Manchuria Railway and the Chinese Eastern Railway Experiment farms are performing important scientific and economic services.

Marketing and routes to port cities

The crop moves to market after the ground freezes, since otherwise the trails across the country are unfit for heavy hauling in the cumbersome two-wheeled carts. Beans are bought from the farmers by the inn-keepers in the interior, who in turn deliver them to the railway station or river port dealers. Except for the final stages of marketing, the assembling process is al-

the 1990s, the number of people in the world who are illiterate has increased from 1.2 billion to 1.5 billion. The number of illiterate people in the world is projected to reach 1.7 billion by the year 2015. The number of illiterate people in the world is projected to reach 1.7 billion by the year 2015.

[illegible][illegible]

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971). The concentration of chlorophylls was expressed as $\mu\text{g mL}^{-1}$ of the sample.

[illegible]

most entirely in the hands of the Chinese, Japanese in South Manchuria, Russians and a few other Europeans in North Manchuria are, in the main, brokers and exporters. There are produce exchanges not only at Dairen, and Harbin but at a number of other cities. In recent years buying and holding activities of the largest Chinese banks have come to be a factor in marketing operations.

Harbin is a concentration point for beans grown in the north, from which city they are sent either east to Vladivostok or south to Dairen. Beans grown in the south are sent to Dairen. Recently about a fourth of the bean exports have been shipped from Vladivostok. The shorter rail haul and lower freight rates are in favor of Vladivostok for northern produce, and as bean production extends further north with the development of northern Manchuria, Harbin as a milling center and Vladivostok as the nearest outlet port become a serious problem in competition which is now facing the milling industry and the traffic of Dairen. Both Vladivostok and Dairen have good port facilities for handling bean products.

The oil milling industry

The bean milling centers are Harbin and Dairen. At present there are some 450 mills in Manchuria with a capacity two to three times the export requirements of bean-cake. The excessive milling capacity is burdensome to the industry in many respects. Mill operators state that the current demand for bean-cake determines when and to what capacity the oil mills can operate. Since Japan takes fully seventy-five per cent of the bean-cake exports, the milling industry in Manchuria is fundamentally limited by the outlet for bean-cake in Japan.

Only one mill in Manchuria is using the chemical extraction method and only two mills are equipped with hydraulic pressure machinery turning out plate cake. Most of the mills use either hand screw or hydraulic pressure presses making standard round bean-cakes weighing 61 pounds. The chemical extraction and plate cake presses secure four and two per cent more oil respectively, than the ten per cent extracted by the round cake presses, but under present conditions in Manchuria of prices of beans, oil, labor, and equipment, opinion seems to justify the round type press.

The export trade

Exports of soy beans and bean products from Manchurian ports in terms of whole beans have increased from about 1,727,000 short tons in 1915 to 4,159,000 tons in 1927, according to figures compiled from reports by the Chinese Maritime Customs. A little over half goes out in the form of cake and oil. Shipments for 1915 to 1927 were as follows:

1. The first part of the report deals with the general situation of the country and the progress of the work. It is a very interesting and informative document, which gives a clear picture of the state of affairs in the country and the progress of the work. The report is well written and easy to read, and it is a valuable source of information for anyone interested in the country and its progress.

2. The second part of the report deals with the specific work done during the year. It is a very detailed and comprehensive document, which gives a clear picture of the work done in each of the different departments. The report is well written and easy to read, and it is a valuable source of information for anyone interested in the work done during the year.

3. The third part of the report deals with the financial situation of the country. It is a very detailed and comprehensive document, which gives a clear picture of the financial situation of the country and the progress of the work. The report is well written and easy to read, and it is a valuable source of information for anyone interested in the financial situation of the country.

4. The fourth part of the report deals with the social situation of the country. It is a very detailed and comprehensive document, which gives a clear picture of the social situation of the country and the progress of the work. The report is well written and easy to read, and it is a valuable source of information for anyone interested in the social situation of the country.

5. The fifth part of the report deals with the economic situation of the country. It is a very detailed and comprehensive document, which gives a clear picture of the economic situation of the country and the progress of the work. The report is well written and easy to read, and it is a valuable source of information for anyone interested in the economic situation of the country.

6. The sixth part of the report deals with the political situation of the country. It is a very detailed and comprehensive document, which gives a clear picture of the political situation of the country and the progress of the work. The report is well written and easy to read, and it is a valuable source of information for anyone interested in the political situation of the country.

7. The seventh part of the report deals with the cultural situation of the country. It is a very detailed and comprehensive document, which gives a clear picture of the cultural situation of the country and the progress of the work. The report is well written and easy to read, and it is a valuable source of information for anyone interested in the cultural situation of the country.

SOY BEANS AND BEAN PRODUCTS: Annual exports from stations in
Manchuria, 1915-1927

Year	Bean oil	Beans	Bean cake	Bean equivalent of bean cake <u>a/</u>	Total beans and bean equivalent of bean cake
	1,000 short tons	1,000 short tons	1,000 short tons	1,000 short tons	1,000 short tons
1915	73	846	831	881	1,727
1916	94	538	855	906	1,444
1917	127	653	1,156	1,325	1,978
1918	150	523	1,196	1,268	1,791
1919	146	798	1,249	1,324	2,122
1920	121	751	1,439	1,525	2,276
1921	96	965	1,645	1,743	2,708
1922	111	1,183	1,774	1,989	3,172
1923	152	1,365	1,987	2,106	3,471
1924	146	1,586	1,804	1,912	3,498
1925	142	1,563	1,721	1,824	3,387
1926	185	1,595	2,115	2,241	3,826
1927	173	1,933	2,100	2,226	4,159

Compiled from Reports by the Chinese Maritime Customs.

a/ Obtained by multiplying the bean-cake exports by 1.06, assuming that one ton of bean-cake = 1.06 tons of beans.

The destination of Manchurian exports of soy beans and bean products is obscured by the fact that exports to Vladivostok for reexport are credited to "Russian Pacific Ports". In the case of beans nearly half goes to Russian ports; of oil, about a fourth, and cake from a tenth to a fourth. A further complication arises from the fact that exports by destination are not given by ports, making it difficult to separate the Manchurian foreign trade from that of China proper.

Of the total Chinese exports of these commodities about 95 to 99 per cent is of Manchurian origin. Yellow bean exports from China include nearly all of the soy bean exports. Of those reported for China as a whole about 95 per cent are from Manchuria. Of the bean exports for the years 1924-1926 in addition to the 45 per cent sent to Russian ports, about a fourth of the total was sent to Japan and Formosa, about 15 per cent to other Asiatic countries, 5 per cent to the Netherlands and 3 per cent to Great Britain. Figures compiled from reports of the Chinese Customs are as follows:

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations

$$\frac{dx}{dt} = f(x, y, z), \quad \frac{dy}{dt} = g(x, y, z), \quad \frac{dz}{dt} = h(x, y, z),$$

where f, g, h are continuous functions of x, y, z and satisfy the Lipschitz condition.

2. In the second part of the paper we consider the problem of the uniqueness of solutions of the system of equations

$$\frac{dx}{dt} = f(x, y, z), \quad \frac{dy}{dt} = g(x, y, z), \quad \frac{dz}{dt} = h(x, y, z),$$

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SOY BEANS (YELLOW): Exports from China, of which about 95 per cent was from Manchuria, 1924 to 1926

Principal countries	1924	1925	1926
	Short tons	Short tons	Short tons
Russian Pacific ports	612,100	533,400	635,900
Japan, including Taiwan	397,300	358,100	242,900
Dutch Indies	83,200	79,100	65,800
Turkey, Persia, Egypt and Aden	84,000	97,200	56,900
Netherlands	74,900	54,000	96,900
Chosen	48,200	31,100	70,100
Great Britain	42,500	4,900	57,700
Other countries	67,900	54,400	76,700
Total abroad	1,410,100	1,212,200	1,302,800
Chinese ports	189,600	247,200	267,100
Total exports	1,599,700	1,459,400	1,569,900

Of the exports listed those to Turkey, Persia, Egypt and Aden are mostly reexports to northwestern European countries. The beans sent to Japan, Chosen, Dutch East Indies and China proper are mostly for food while those to Europe are for crushing for oil and oil-cake, the cake to be used for live stock feed.

The bean oil exports from Manchuria are normally less than the extraction as indicated by bean cake exports which indicates a local consumption of oil for food purposes. Manchurian exports of oil make up about 98 per cent of the total reported for China. During the period 1916 to 1918 shipments to Europe practically stopped but those to the United States in 1918 amounted to 142,000 short tons, or almost the entire output of the Manchurian mills. Following the war with the resumption of trade with Europe, shipments to the United States fell in 1919 to 49,000 short tons. The Tariff Act of 1922 exacted a duty of 2.5 cents a pound and exports to the United States since 1923 have not exceeded 13,000 short tons. The consumption of bean oil in Europe is reported to be largely for edible products; butter substitutes and olive oil substitutes and to a lesser extent for soaps and paints. Of the oil shipped from China, in addition to the fourth sent to Russian Pacific ports in the three years 1924-26, about a sixth was sent to other Asiatic and African countries. About a fourth went to Great Britain, about 12 per cent to Italy, 10 per cent to the Netherlands and 7 per cent to the United States including Hawaii. Actual figures are as follows:

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations

$$\begin{cases} \Delta u = f(x, y, z, u, v, w) \\ \Delta v = g(x, y, z, u, v, w) \\ \Delta w = h(x, y, z, u, v, w) \end{cases} \quad (1)$$

where f, g, h are continuous functions of the variables x, y, z, u, v, w and satisfy the conditions

$$\begin{aligned} f(x, y, z, u, v, w) &= O(|u| + |v| + |w|) \\ g(x, y, z, u, v, w) &= O(|u| + |v| + |w|) \\ h(x, y, z, u, v, w) &= O(|u| + |v| + |w|) \end{aligned} \quad (2)$$

where O denotes the order of magnitude. The second part of the paper is devoted to a study of the problem of the uniqueness of solutions of the system of equations (1) under the conditions (2).

The third part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are linear in the variables u, v, w .

The fourth part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are quadratic in the variables u, v, w .

The fifth part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are cubic in the variables u, v, w .

The sixth part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are quartic in the variables u, v, w .

The seventh part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are quintic in the variables u, v, w .

The eighth part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are sextic in the variables u, v, w .

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The thirteenth part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are undecimic in the variables u, v, w .

The fourteenth part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are duodecimic in the variables u, v, w .

The fifteenth part of the paper is devoted to a study of the problem of the existence of solutions of the system of equations (1) under the conditions (2) for the case when the functions f, g, h are tredecimic in the variables u, v, w .

SOY-BEAN OIL: Exports from China, of which about 98 per cent was from Manchuria, 1924 to 1926

Principal countries	1924	1925	1926
	Short tons	Short tons	Short tons
Russian Pacific ports	40,700	33,700	41,800
Great Britain	34,800	33,800	41,900
Turkey, Persia, Egypt and Aden	25,500	18,000	32,200
Italy	8,900	17,800	29,200
Netherlands	16,700	12,700	15,200
United States, including Hawaii	8,200	9,200	12,500
Other countries	7,600	7,400	5,000
Total abroad	141,400	132,600	177,800
Chinese ports	6,900	9,500	9,600
	148,300	142,100	187,400

Compiled from Reports of Chinese Maritime Customs.

The bean cake is shipped almost entirely to Japan, Formosa and Chosen. Less than one per cent is shipped to the United States. Exporters state that shipment of bean cake and meal to the United States is unprofitable in competition with cottonseed meal and the business is restricted to the Pacific Coast where the imported bean cake and meal enters into mixed dairy feeds.

The shipments to South China ports have been quite uniformly the same during the past decade. Considering the "Russian Pacific Ports" statistics as re-shipments, Japan takings of bean cake comprise fully seventy-five per cent of the total exports and the continuously larger takings, from 300,000 tons in 1915 to 1,600,000 tons in 1926, have been remarkable. It is a significant fact that over a period of thirteen years there has not been a material increase in the amount of bean cake used for fertilizer on the mulberry and rice fields of South China, but that in Japan where rice prices are considerably higher than in China and where increasingly intensive farming methods are being employed, there has developed an outlet for such large quantities of Manchurian bean cake.

... ..

SOY-BEAN CAKE: Exports from China, of which about 99 per cent was from Manchuria, 1924 to 1926

Principal countries	1924	1925	1926
	Short tons	Short tons	Short tons
Japan, including Formosa *	1,310,600	1,126,000	1,190,100
Russian Pacific ports	140,900	125,200	437,200
Korea	39,300	49,800	88,100
United States, including Hawaii	12,400	13,700	18,800
Other foreign countries	---	2,800	2,800
Total abroad	1,503,200	1,377,500	1,737,000
To Chinese ports	368,400	343,500	378,900
Total exports	1,871,600	1,721,000	2,115,900

Compiled from Reports of Chinese Maritime Customs.

* The ocean rate on bean cake to Japan varies but it is approximately United States \$1.00 per ton from Dairen to Kobe, Japan.

Prices

The general trend of soy bean prices at Dairen for the past six years has been upward. Fluctuations in the price of beans were generally paralleled by fluctuations in bean cake prices. Since bean cake is the chief product of the Manchurian crushing mills the above relationship is a natural one. The margin of bean prices over those of bean cake increased steadily between 1922 and 1927. The relationship between bean oil prices and bean prices is not so marked. Bean oil is largely a secondary product of crushing, the amount obtained per pound of beans is small and the price is partially determined by factors other than the price of beans. Due to fluctuations in the silver exchange at Dairen changes in price level expressed in United States currency do not always parallel changes in Dairen price quotations. For this reason the table on pages 11 and 12 gives prices as quoted in silver yen at Dairen together with the conversions to United States currency for the years 1921-22 to 1926-27.

The 1927 soy bean crop and current market situation in Manchuria are discussed in Foreign Service release FO-29, which may be obtained on application to the Foreign Service of this Bureau.

SOY-BEANS AND SOY BEAN PRODUCTS: Average monthly price at Dairen
in silver yen and United States currency and price of soy-
bean oil at New York, 1921-22 to 1926-27

Year and month	Beans		Bean cake		Bean oil		Soy-bean oil
							crude in bbls.
							at New York
	Silver		Silver		Silver		
	yen	Cents	yen	Cents	yen	Cents	Cents per
	per	per	piece of	per	per	per	pound
	picul	a/pound	61 lbs.	pound	picul	a/pound	
	Yen	Cents	Yen	Cents	Yen	Cents	Cents
1921-22							
November	3.74	1.13	1.38	.84	10.58	2.93	8.8
December	3.59	1.15	1.40	.97	9.70	3.11	9.0
January	3.60	1.16	1.40	.99	9.19	2.97	8.8
February	3.92	1.03	1.57	1.21	9.41	3.34	9.0
March	4.27	1.62	1.61	1.33	9.80	3.71	10.7
April	4.24	1.56	1.66	1.34	8.94	3.29	11.3
May	4.30	1.53	1.80	1.40	8.60	3.14	11.3
June	4.55	1.64	1.82	1.44	9.62	3.47	11.6
July	4.35	1.55	1.72	1.34	10.08	3.60	12.2
August	--	--	--	--	--	--	12.5
September	5.32	1.67	2.18	1.54	12.48	4.21	11.9
October	5.36	1.64	2.27	1.52	10.44	3.18	10.5
1922-23							
November	5.15	1.65	2.16	1.75	10.37	3.33	10.5
December	5.48	1.77	2.22	1.55	11.79	3.78	10.5
January	5.40	1.77	2.14	1.52	11.42	3.73	11.3
February	5.80	1.95	2.21	1.62	14.12	4.72	11.8
March	5.68	1.93	2.11	1.57	14.70	5.11	12.3
April	5.70	1.87	2.10	1.50	14.84	4.85	12.9
May	5.80	1.80	2.05	1.40	16.58	4.97	13.2
June	6.03	1.87	2.22	1.51	16.00	4.96	12.8
July	5.29	1.63	2.01	1.42	13.55	4.23	11.8
August	5.06	1.61	1.94	1.35	12.48	3.98	10.3
September	4.70	1.52	1.79	1.24	11.80	3.75	10.8
October	4.54	1.51	1.67	.85	12.54	4.15	11.0
1923-24							
November	4.48	1.57	1.53	1.14	13.86	4.74	11.0
December	5.18	1.78	1.80	1.33	14.54	4.92	11.0
January	5.55	1.77	1.93	1.34	15.77	5.01	11.3
February	5.59	1.78	2.00	1.40	16.20	5.19	11.6
March	5.54	1.49	1.88	1.17	16.51	4.71	12.0
April	5.71	1.57	1.95	1.17	17.03	4.69	12.0
May	5.87	1.60	2.13	1.27	15.89	4.34	12.0
June	5.73	1.68	1.89	1.21	15.48	4.54	12.0
July	4.96	1.42	1.78	1.15	13.62	4.02	12.1
August	5.14	1.57	1.86	1.24	13.65	4.16	12.8
September	5.16	1.51	1.76	1.12	15.62	4.57	12.8
October	5.28	1.51	1.83	1.14	15.29	4.36	13.2

Continued -

Table 1. *Continued*

SOY-BEANS AND SOY-BEAN PRODUCTS: Average monthly price at Dairen
in silver yen and United States currency and price of soy-
bean oil at New York, 1921-22 to 1926-27, cont'd.

Year and month	Beans		Bean cake		Bean oil		Soy-bean oil crude in bbls at New York
	Silver :		Silver :		Silver :		
	yen	Cents	yen	Cents	yen	Cents	Cents per
	per	per	piece of:	per	per	per	pound
	picul a/pound		61 lbs. pound		picul a/pound		
	Yen	Cents	Yen	Cents	Yen	Cents	Cents
1924-25							
November	5.43	1.57	1.92	1.18	15.55	4.37	13.5
December	5.60	1.53	1.94	1.13	16.32	4.45	13.3
January	5.83	1.52	1.98	1.13	16.85	4.41	13.7
February	5.77	1.51	1.89	1.08	16.80	4.39	13.8
March	5.61	1.49	1.83	1.06	15.91	4.21	13.4
April	5.51	1.43	1.85	1.05	16.05	4.17	12.9
May	5.30	1.34	1.76	.96	15.28	3.86	12.9
June	5.17	1.29	1.68	.92	15.72	4.64	12.9
July	5.40	1.34	1.71	.93	16.65	4.15	13.0
August	5.64	1.37	1.70	.90	16.73	4.06	13.0
September	5.79	1.29	1.72	.84	17.95	4.01	13.2
October	5.31	1.14	1.71	.80	17.48	3.74	13.3
1925-26							
November	5.44	1.24	1.73	.86	17.20	3.91	13.3
December	5.56	1.29	1.75	.89	17.52	4.08	13.3
January	5.64	1.35	1.72	.90	17.42	4.15	13.3
February	5.52	1.57	1.71	.93	16.85	4.20	13.2
March	5.57	1.48	1.78	1.04	16.53	4.73	12.8
April	5.82	1.62	1.82	1.11	17.55	4.83	12.5
May	6.09	1.68	1.90	1.15	18.25	4.62	12.5
June	5.99	1.56	1.87	1.07	18.50	4.82	12.8
July	6.26	1.66	1.92	1.11	18.00	4.76	12.5
August	6.87	1.83	1.87	1.10	17.44	4.64	12.5
September	6.52	1.72	1.77	1.02	17.48	4.61	12.5
October	5.45	1.47	1.74	1.02	16.32	4.39	12.5
1926-27							
November	5.55	1.56	1.82	1.14	16.26	4.65	12.3
December	5.62	1.64	1.82	1.16	15.93	4.46	12.1
January	5.87	1.78	1.94	1.29	15.82	4.80	12.0
February	5.95	1.88	1.98	1.37	15.81	5.01	12.0
March	5.90	1.90	1.98	1.39	16.45	5.27	12.1
April	6.23	2.08	2.08	1.52	16.72	5.60	12.0
May	6.12	1.98	1.98	1.40	16.62	5.37	12.1
June	6.28	2.00	2.06	1.42	17.73	5.63	12.0
July	6.12	1.98	1.92	1.36	16.55	5.37	12.0

Taken from "History of three foods" by Dairen Chamber of Commerce. The original report also gives monthly high and low prices for the period 1915 to 1927 in silver yen, which can be supplied on request.

a/ One picul is equivalent to 133.3 pounds.

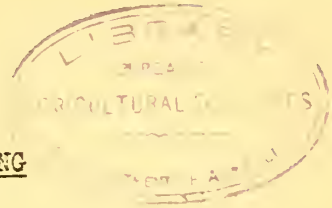
UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

F.S.
FO-31

September 7, 1928

FOREIGN NEWS ON FATS AND OILS

MANCHURIA SOYBEAN CROP PROMISING



SEP 12 1928

The soybean crop of Manchuria is at present in promising condition and may be equal to or slightly larger than last year's record crop if favorable conditions continue, according to a cable to the Foreign Service of the Bureau of Agricultural Economics from Agricultural Commissioner Paul O. Nyhus. In general, rainfall in Manchuria has been more than ample and dry weather is needed in September to insure good yields and high quality. The acreage planted to soybeans in North Manchuria is above that of last year.

The chief United States interest usually lies in the soybean oil market, but according to Mr. Nyhus the two companies in Manchuria which manufacture plate cake report that there has been strong demand for plate cake on the Pacific Coast of the United States where it is used for livestock feeding.

The wholesale price of soy beans at Harbin on August 15 for October delivery was 95 cents United States currency per bushel of 60 pounds. Harbin prices for earlier years are not available for comparison. The average price of soy beans at Dairen for July 1927 was \$1.19 per bushel, while in August 1926 and 1925 the price per bushel averaged \$1.10 and \$.82 respectively. The Dairen price would probably include cost of shipment from other centers, such as Harbin, as large quantities of beans are sent from Harbin to Dairen for shipment.

It is reported that Europe is showing a strong early interest in contracts for the new bean crop. Exports of beans from Manchuria for the nine months period ending June 30 show a gain of 5 per cent in total bean products compared to the corresponding period a year ago. Bean cake shipments fell off 25 per cent due to the curtailment in Japanese takings, but bean shipments gained 45 per cent with the increased demand for beans by the European market.

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1. *Chlorophyll a* (Chl *a*)

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1. *Pharmaceutical industry* – The pharmaceutical industry is a major contributor to the U.S. economy, with sales of over \$200 billion in 2000. The industry is characterized by high R&D costs, long development times, and high barriers to entry. The industry is also heavily regulated by the FDA.

The following information was obtained from the records of the
 United States Department of the Interior, Bureau of Land Management,
 and the United States Department of the Interior, Bureau of Reclamation,
 regarding the land owned by the United States in the State of
 California, and the land owned by the State of California in the
 United States.

the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion. The number of people aged 65 and over is expected to increase from 200 million to 400 million. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Washington

F.S.
FO-32

September 13, 1928

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OCT 9 1928 FOREIGN NEWS ON FATS AND OILS

ARGENTINE VEGETABLE OIL PRODUCTION SHOWS INCREASE IN 1927

The vegetable oil industry of Argentina was more active in 1927 than in 1926 due to a large increase in the production of peanut oil and smaller increases in the production of rapeseed, cotton seed and olive oils, according to a report to the Foreign Service of the Bureau of Agricultural Economics from Consul Sycks at Buenos Aires. Linseed oil, castor oil and corn oil were produced in smaller amounts in 1927 than in 1926. The total production of vegetable oils produced during 1927 exceeded the total for 1926 by 20.4 per cent. Seed employed was 10.8 per cent greater than the previous year and the average yield was 2 per cent greater than in 1926. The production of olive oil is expected to increase each year, according to Consul Sycks. Experiments with olive oil production in the provinces of Mendoza, La Rioja and Entre Rios, while, on a small scale, gave satisfactory results. In the provinces bordering on the Andes the cultivation of olive trees is well under way and it is expected that within a few years the production of olive oil will become of importance to Argentina. The following table gives the production of vegetable oils in Argentina together with seed utilized, per cent of oil obtained and production of oil cake for the years 1926 and 1927. For figures for the years 1923-1925 see Foreign Service release, FO-14, August 21, 1926.

VEGETABLE OILS: Seed used and oil and cake produced in Argentina, 1926 and 1927

Variety	Seed used		Oil obtained		Oil yield		Oil cakes	
	1926	1927	1926	1927	1926	1927	1926	1927
	1,000	1,000	1,000	1,000	Per	Per	1,000	1,000
	pounds	pounds	pounds	pounds	cent	cent	pounds	pounds
Linseed	30,023	26,790	8,188	7,614	27	28	21,306	18,905
Rapeseed	24,732	36,137	7,011	10,066	28	28	16,724	24,670
Peanut	108,066	119,812	25,591	32,088	24	27	44,201	57,045
Cotton	56,589	67,367	7,423	8,732	13	13	21,336	31,824
Castor bean	4,453	4,409	1,019	999	23	23	573	992
Sunflower	---	582	---	128	--	22	---	267
Corn	20,555	15,672	822	627	4	4	---	---
Olive	138	275	32	49	23	18	---	---

UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau of Agricultural Economics
Washington

F.S.
FO-33

November 9, 1928.

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FOREIGN NEWS ON FATS AND OILS

MANCHURIAN SOY BEAN CROP AND MARKET OUTLOOK

The latest estimate of the 1928 soy bean crop of Manchuria issued by the South Manchurian Railway is 5,450,000 short tons, or 8 per cent above the revised estimate for last year, according to a cable to the Foreign Service of the Bureau of Agricultural Economics from Agricultural Commissioner Iyhus quoting Consul Langdon at Dairen. Trade reports confirm an increase in production but place it at 6 or 7 per cent. The gain over last year is entirely in North Manchuria.

Rainfall was somewhat excessive during August, particularly in South Manchuria, but there was good ripening and harvest weather in September. This year's crop was harvested and stored in excellent condition and is of good quality, in contrast to last year when a considerable portion of the beans failed to mature properly and contained too much moisture. Carryover is estimated at 50,000 to 100,000 tons compared with 500,000 tons a year ago. The decrease in stocks was due to the heavy European demand for beans.

The Japanese demand for bean cake, which is an important factor in determining the amount of beans crushed, is weak, as is also the European demand for Manchurian oil, and mill operations are at a low level. Moreover, there is an especially strong demand for new crop beans on the part of Europe which will tend to reduce the amount of beans available for crushing in Manchuria. European buyers are making extremely heavy bookings for shipping space and shippers predict that bean shipments to Europe will be as much as 40 per cent larger than last season's record shipments. During the latter part of October, c.i.f. Rotterdam quotations on beans for November shipment were \$50 a ton, which is 94 cents a ton higher than last season's November price. A detailed survey of the soy bean industry of Manchuria was published in Foreign Service Release, FO-30, June 22, 1928.

